CLAIMS (Article 34 PCT)

1. A process for detecting the presence of a nucleoside diphosphate in a sample, comprising the step of detecting the dephosphorylation of the phosphoenzyme form of a nucleoside diphosphate kinase (NDPK) by detecting a change in a characteristic of the NDPK which differs between its phosphorylated and unphosphorylated forms.

2. A process for detecting the presence of a nucleoside triphosphate in a sample, comprising the step of detecting the phosphorylation of a nucleoside diphosphate kinase (NDPK) to the phosphoenzyme form by detecting a change in a characteristic of the NDPK which differs between its phosphorylated and unphosphorylated forms.

3. The process of claim 1 or claim 2, wherein the phosphorylation or dephosphorylation is detected by using an intrinsic property of NDPK.

4. The process of claim 1 or claim 2, wherein the NDPK is modified to carry a label which gives a different detectable signal when the enzyme is phosphorylated from when it is unphosphorylated.

5. The process of claim 4, wherein the NDPK carries a fluorescent label.

6. The process of claim 5, wherein the fluorescent label is attached to the NDPK via a cysteine residue.

7. The process of claim 5 or claim 6, wherein the fluorescent label is IDCC (*N*-[2-(iodoacetamido)ethyl]-7-diethylaminocoumarin-3-carboxamide).

8. The process of claim 1, wherein the nucleoside diphosphate is ADP or GDP.

9. The process of claim 2, wherein the nucleoside triphosphate is ATP or GTP.

10. The process of any preceding claim, being a quantitative process.

11. The process of any preceding claim, wherein the NDPK is the NDPK of *Myxococcus xanthus* carrying a Asp112→Cys mutation, and carrying an IDCC label at this mutated residue.

12. NDPK which is modified to carry a label which gives a different detectable signal when the enzyme is phosphorylated from when it is unphosphorylated.

13. The NDPK of claim 12, wherein the label on the modified NDPK is a fluorescent label.

14. The NDPK of claim 13, wherein the fluorescent label is attached to the NDPK via a cysteine residue.

15. The NDPK of claim 13 or claim 14, wherein the fluorescent label is IDCC.

16. NDPK of *Myxococcus xanthus* carrying a Asp112→Cys mutation, and carrying an IDCC label at this mutated residue.

17. NDPK modified by the attachment of at least one detectable label that is sensitive to the binding of a nucleoside diphosphate

18. A substrate having the NDPK of any one of claims 12 to 17 immobilised thereto.

19. The NDPK of any one of claims 12 to 17 for use as an *in vivo* or *in vitro* diagnostic reagent.

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